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Bulletin of Geography. Socio-economic Series, No. 44 (2019): 81–91
http://doi.org/10.2478/bog-2019-0017

ISSN 1732–4254 quarterly

BULLETIN OF GEOGRAPHY. SOCIO–ECONOMIC SERIES

journal homepages:
https://content.sciendo.com/view/journals/bog/bog-overview.xml
http://apcz.umk.pl/czasopisma/index.php/BGSS/index

Local planning attitudes: Comparative content analysis of municipal director plans of shrinking Portuguese cities

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How to cite:
Sousa, S. (2019) Local planning attitudes: Comparative content analysis of municipal director plans of Portuguese shrinking cities. *Bulletin of Geography. Socio-economic Series*, 44(44), 81-91. DOI: http://doi.org/10.2478/bog-2019-0017

Abstract. Traditional planning practice, in its essence, usually pursues urban growth, and is more comfortable dealing with population increase and other growth dynamics than with population decline and what ensues. The main goal of this article is to assess local planning attitudes in Portugal towards demographic change, and in particular towards population decrease, in terms of housing development. In order to do so, a comparative content analysis of municipal director plans (PDM) – Planos Diretores Municipais – of the fourteen Portuguese cities that shrank prevalently and persistently across both conjoining periods 1991–2001–2011 was completed using a simple matrix of analysis. The qualitative analysis of the regulations of these PDMs showed that aspects of population decrease and shrinkage in relation to housing development are gradually entering local planning practice, though there is not yet an overall intelligible strategy. In Portugal, demographic change and housing development are only just starting to come together in local spatial planning.

Article details:
Received: 6 August 2018
Revised: 18 March 2019
Accepted: 23 May 2019

Key words:
Urban shrinkage, shrinking cities, demographic change, urban planning, Portugal

Contents:

1. Introduction

"Planning cultures" (Soja, 1999; Selle, 1999) gained a new breath of life from comparative research projects (Knieling and Othengrafen, 2009; Othengrafen, 2010; Sanyal, 2005). Studies showed that "shrinking cities" put a new perspective on age-old challenges and can trigger change in planning cultures, thus offering a chance to research the principles upon which spatial planning has traditionally been based and maybe shedding light on it (Foster, 2010; Pallagst, 2010; Pallagst et al., 2017). Hence, identifying changes in planning systems and beyond that in planning cultures (as well as testing and evaluating land management, planning governance and policy options for shrinking cities or regions) is considered an important research question to be pursued (Pallagst, 2010; Foster, 2010). Moreover, against the background of a growth-oriented culture, cities confronted with population decrease often refuse to accept shrinkage and its "hidden" opportunities (Röschlau, 2013; Sousa and Pinho, 2015; Simon and Mikešová, 2014).

Simon and Mikešová (2014) argue that demographic change such as population ageing and/or population shrinkage are long-term processes with severe consequences for municipalities and their population that will become even more acute, and adequate and adapted strategies are required. Research has shown that housing vacancy is one of the most identifiable symptoms of population decrease in cities (Feldmann, 2008; Hoekstra and Vakili-Zad, 2011; Saraiva et al., 2017), and a serious urban problem for local governments, but this does not always reflect upon planning practices (Couch and Cocks, 2013; Gabriel and Nothaft, 2001; Glaeser and Gyourko, 2005), although there are exceptions (Deilmann et al., 2009; Glock and Häussermann, 2004; Wilhelmsson et al., 2011).

The objective of the current study was to assess attitudes in Portugal regarding the integration of population decrease and housing development in local spatial planning strategies, taking into account that shrinking areas frequently have a housing surplus. We hoped that a content analysis would reveal whether, and how, local spatial planning practice (namely urban and expansion areas for housing) aligned with the population loss identified in the cities in question. In other words, the general goal was to shed light on how planning was reacting to the issues stated above – perception-strategy. Our intention was not to grade the municipal governments' planning performance. Our hypothesis was that even though local governments and practitioners from shrinking Portuguese cities may be aware of demographic change, the latter is not fully integrated in local spatial planning, nor in housing development specifically.

For the purpose of this paper, shrinking cities are those cities that persistently and prevalently lost population in the period 1991–2001–2011, i.e. the cities that lost population between 1991 and 2001 and between 2001 and 2011 (Beauregard, 2009).

2. Research materials and methods

According to the World Bank, Portugal had the fifth largest population loss between 2013 and 2014: low fertility, negative net migration, and an aging population translated into 59,000 inhabitants fewer in a one-year period (-0.57%) (Albuquerque and Rosa, 2015). The president of the Portuguese Association of Demography emphasises that this accumulated population deficit may be even worse, if we subtract the number of temporary migrants counted as residents. She completes the demographic panorama: "We are a country in sharp demographic decline, […] with a strong birth rate drop […], the number of deaths has been higher than the number of births and also, in recent years, immigration has decreased while emigration records unpredictably amazing values" (Albuquerque and Rosa, 2015).

From the United Nations (UN) perspective, population loss in Portugal is not new. The country appears among the ten largest population losses between 2010 and 2014 (-1.7%). Estimates show that Portugal, at present with 10 million inhabitants, will have 7.5 million in 2100. According to a forecast in a Moody's study, by 2020, Portugal will join Germany, Italy, Japan and other eight countries with a "super-elderly" population (O'Connor, 2014). By 2060, the economic old-age dependency ratio is projected to be 80% or more in eight EU Member States, namely Bulgaria, Greece, Croatia, Italy, Poland, Portugal, Romania and Slovakia, where it

reaches a maximum of 93.0% (EC, 2014). In Portugal, as in Central and Eastern Europe and other European regions (Wolff and Wiechmann, 2018; Haase et al., 2016; Schönerklee-Grasser, 2012; Simon and Mikešová, 2014), there is a very severe shrinkage phenomenon driven by changing demographics, including outmigration and a sharp decrease in fertility rates, especially from the 1990s onwards, and it is expected that there will be fewer regions with a growing population and even fewer with a growing population due to natural change.

This national context frames persistent and prevalent urban shrinkage in one tenth of the cities that joined a more traditional movement of population towards the coast. There are fourteen persistently and prevalently shrinking cities across the period 1991–2001–2011 in Portugal (1); a brief introduction is given below. The cores of the metropolitan regions of Lisbon and Porto are experiencing population shrinkage due to metropolisation and population de-concentration from urban cores to wider metropolitan areas. They are not alone, for other cities, such as Milan, Budapest or Łódź, also endured these kinds of processes (Simon and Mikešová, 2014).

After peaking at 810,000 in the 1980s, Lisbon's population declined steadily to 552,700 in 2011 (-16.68%), mainly due to out-migration (Statistics Portugal, 2011). The combined result of Lisbon's population outflow and the decline in birth and mortality rates has more than doubled Lisbon's elderly population ratio from 9.3% in 1960 to 24% in 2011, which is higher than Portugal's national average (20%), substantially shifting toward an ageing population (OECD, 2015). In the capital city, out-migration, mostly of the working-age population, and in particular of young families, has exceeded in-migration for the last three decades (OECD, 2015). Twenty-seven percent of immigrants in Lisbon were international migrants (2005/11), mainly from Brazil. However, more recently, younger student immigrants have started to move into the historic centre (OECD, 2015).

Porto, the second most important city in the country and traditionally a port city, lost 21.45% of its population in the period analysed and has become a major tourist destination known for its architecture, its World Heritage historic centre and its wine. Almada and Amadora still have some industries but are mainly Lisbon's residential suburbs (part of which started out being illegal) that are beginning to lose population due to some housing decay (Amadora is the "least shrinking city", with a -3.65% loss). Angra do Heroísmo is located in Terceira Island, in the Azores archipelago. It suffered major destruction due to an earthquake in 1980 leading to the resettlement of part of the population, in an already emigration-prone regional context. Now a UNESCO World Heritage Site, urban development is constrained by stricter regulations. Espinho is quite a modern and relatively touristic coastal city located near the beach, to the south of Porto. Fiães and Lourosa (known as the cork capital) are small ancient cities both situated in the municipality of Santa Maria da Feira. Economic development in Gouveia, a medieval city, has been driven by the wool industry.

Mangualde, at the juncture of important communication ways in the Dão wine region, in the Centre of Portugal, benefits from its proximity to a main railway connection to Europe. Santana in Madeira Island, the city that lost the most population between 1991 and 2011 (-29.72%), is a UNESCO World Biosphere Reserve. Agriculture has been the basis of its population subsistence, as well as hospitality and catering services. Once an industrial centre (e.g. paper factories), Tomar, in the centre of the country, hosts services linked to its industrial past, grows corn crops, olive groves and vineyards, and has a growing touristic offer. Vila Franca de Xira, in Greater Lisbon, boosted by the country's first railway line in 1856, currently lives from commerce and services due to the progressive regression of the industrial and fisheries sectors. Vila Nova de Santo André (in the municipality of Santiago do Cacém, Alentejo) was created from scratch to serve as a dormitory suburb to the industrial complex of Sines.

The Portuguese Ministry of the Environment, Spatial Planning and Energy (2) admits that the National Programme for Spatial Planning Policies (PNPOT) approved in 2007 identified several problems regarding spatial planning in Portugal (MAOTE, 2015). These included: muddled urban expansion and fragmented urban fabric; land dilapidation and desertification risks, concomitant with climate change; degradation of the quality of residential areas, especially in historic centres and in

first suburbs, but also bad planning of public investment in infrastructure and public facilities and difficult coordination between the main institutional, public and private actors responsible for policies and interventions with territorial impact. Thus, an important orientation of the PNPOT refers to the need to contain urban perimeters, valuing and protecting land as a common resource, and seeking to avoid chaotic urban expansion phenomena that lead to high environmental, socio-economic and territorial costs (Carranca and Castro, 2011). This gains even more significance in situations of urban or rural shrinkage.

From the Portuguese standpoint, there are not many contributions to the topic of attitudes towards shrinkage in urban and regional planning.

One exception was a systematic study of the dynamics of urban perimeters with respect to the variation of population, housing, businesses and purchasing power in seventeen PDMs (3) revised after the publication of the PNPOT (Carranca and Castro, 2011). Carranca and Castro's survey showed there had been a "PNPOT effect" in containing urban perimeters, which grew significantly in most cases, but were seemingly disconnected from spatial demographic and economic dynamics. The authors identified two distinct groups: one mostly exceeding 50% growth and a second mostly between 15 and 30% growth. Regardless, the PDMs of the two metropolitan areas or of the heavily urbanised coastal municipalities revealed minor expansion. However, it was noted that in most cases very significant percentage variations of urban perimeters translate into small absolute increases.

Sousa (2010) also made a diagnosis of the spatial planning instruments and policies in nine municipalities (4) which encompassed the cities where population decrease and/or consequences of shrinkage were felt more intensely between 1991 and 2001 and that were moderately representative (e.g. most affected regions, size bands and clusters) (5). In addition, other documents were analysed to define the regional and national framework (Sousa and Pinto, 2014; Sousa, 2010). Sousa (2010) concluded that the concept of shrinking cities was not explicitly mentioned. The author had a three-way explanation: the recent emergence of the phenomenon in Portugal; its prevailing negative connotation; and the novelty of the concept, which was still awaiting transference from theory into practice. Hence, there were only allusions to population decrease and other interconnected demographic issues, without regulatory consequences (Sousa, 2010).

From a different perspective, and based on a survey of newspapers and municipal websites, and by using economic and demographic annual data for 1999–2008, Panagopoulos and Barreira (2012) systematised four common strategies implemented by the Portuguese central and local governments (promoting marriage, attracting high school students, maintaining healthcare services, and employment-oriented strategies) and found their apparent results in coping with population loss. The authors found that most municipalities in their study had implemented strategies of what they chose to designate as "smart growth" and "smart shrinkage", while the others misunderstood shrinkage. Panagopoulos and Barreira (2012) and Barreira et al. (2016) concluded that most local governments chose growth policies, and only a few, facing permanent population decline, seemed to accept the problem and adopted unintegrated strategies to control the process.

Our survey involved a content analysis of the thirteen municipal director plans (PDM) (6) of the identified Portuguese shrinking cities (7).

The PDM, usually a comprehensive plan or, in some cases, simply a long-term land use/zoning plan, is the main local/municipal spatial planning instrument, and is compulsory for all municipalities and legally binding. It establishes the municipal spatial development strategy, the spatial planning policy and other urban policies, and sets the spatial organisation model of the municipality (Decree-Law No. 380/99, Article 84). On the one hand, it integrates and articulates the guidelines established by the national and regional spatial management plans; on the other hand, it is a reference for the preparation of other municipal spatial plans and for the establishment of regional action programmes as well as for the development of sectoral interventions by the central government in the municipality (Decree-Law No. 380/99, Article 85).

This logic was reinforced by the recent 2015 revision of the Legal Framework of the (so-called) Spatial Planning Instruments (8) (RJIGT) (Table 1). The PDM remains mandatory, except in cases where municipalities choose to prepare an intermu-

nicipal director plan; be that as it may, the PDM should set interdependence relations with neighbouring municipalities (Decree-Law No. 80/2015, Article 95).

The thirteen analysed PDMs belong to what in Portugal is called "different generations", i.e. the plans were prepared and ratified under different legal frameworks. The first legal framework (Decree-Law No. 69/90) was in force during the nineties, and the second one (Decree-Law No. 380/99) was operative until July 13th 2015. The average lifespan of the Portuguese PDM is 15 years. According to *Direção Geral do Território* (DGT, 2013), only 21% of these plans have been effective for less than 10 years.

Although the PDM is usually accompanied, amongst other elements, by characterisation studies of the municipal territory, and a report setting out the strategic spatial objectives and options is adopted, as well as its evidence-based evaluation of the economic, social, cultural and environmental conditions for implementation – these are not always public, available, comparable or even binding in any way. The regulations, the zoning map and the constraints map are the forceful elements published in *Diário da República*, the official journal. For reasons of relevance, commonality and comparison, the choice fell on the regulations of the PDM as the object of the content analysis.

Reviewing the PDM implied building a matrix of analysis grounded on previous work by Danielzyk et al. (2002), Farke (2005), Hospers (2013) and Röschlau (2013) (Table 2). Given that we were analysing the strategies embedded in the regulations of the PDM, we developed a matrix mostly regarding those same types of strategies. There are four basic types of strategies towards urban and expansion areas for housing (A) and four towards population decrease (B), which can be inter-combined (e.g. the strategy may be expansive towards housing [TYPE 2A] and indifferent towards population [TYPE 1A]) (Table 3).

The content analysis and type classification was applied to four aspects of the regulations which may or may not be an evident part of the body of the text: goals, constraints, land use, programming and implementation. Main key words included: "population change", "housing development", "population decrease", "housing vacancy" and associated synonyms. Detailed matrixes have been produced, but as quotes are in Portuguese, it was considered pointless to include them. Overall, the regulations were read top-to-bottom, and all explicit and implicit references to these topics were transcribed to the matrixes.

Table 1. Spatial plans in Portugal

Binding public entities	
National level	National Programme for Spatial Planning Policies Sectoral programmes (Transports, Tourism, Natura network) Special programmes: Spatial planning programmes for archaeological parks Spatial planning programmes for protected areas Spatial planning programmes for public water dams Spatial planning programmes for the coastline
Regional level	Intermunicipal programmes Regional programmes
Directly binding individuals	
Sub-regional level	Intermunicipal plans
Municipal level	Municipal director plans Urban development plans Local detailed plans

Source: Decree-Law No. 80/2015, May 14th – Revision of the Legal scheme of the spatial management instruments. Note: This law comes into force 60 days after the publication date.

Table 2. Analysis of the PDM in the light of selected studies (Danielzyk et al. 2002; Farke, 2005; Hospers, 2013)

Attitudes towards population loss/ shrinkage	**Farke (2005)**	**Danielzyk et al. (2002)**	**Hospers (2013)**
	Perception	**Strategy**	**Strategy**
Negative	ignoring	vicious circle	trivialising
⇕	observing without acceptance	expansive	countering
	certain acceptance	maintenance	accepting
	acceptance	planning for decline	utilising
Positive			

Table 3. Strategy towards urban and expansion areas for housing (A) and strategy towards population decrease (B)

TYPE	**A**	**B**
TYPE 1	without goals	indifferent
TYPE 2	expansion	countering
TYPE 3	maintenance	accepting
TYPE 4	shrinkage	utilising

Source: Based on Danielzyk et al. (2002), Farke (2005), Hospers (2013), and Pallagst et al. (2017)

3. Research results

There are seven first-generation PDMs – Almada, Amadora, Espinho, Gouveia, Fiães, Lourosa, Vila Nova de Santo André and Tomar, and six second-generation PDMs – Angra do Heroísmo, Lisbon, Mangualde, Porto, Santana and Vila Franca de Xira. The content analysis of the PDM in force in these shrinking Portuguese cities (summarised in Table 4) reveals that there is a clear pattern: a positive evolution between the first and the second generation of plans devised. However, two cases in both generations can be looked at as "outliers" – Tomar in the first and Santana in the second. Lisbon stands out as the best practice amongst the cases analysed.

In fact, except for Tomar, all the regulations from the first generation of PDMs are TYPE 1A2A/1B, i.e. they are without formulated goals and expansive regarding housing, as well as countering population decrease. It should be mentioned that seldom were goals of any kind included in the regulations of the first-generation plans and there was not a concern to explain the evidence base behind the "law". The urban perimeters of the statistical cities were maintained in all cases, except in the city of Gouveia, where they decreased, and in the city of Vila Nova de Santo André, where they grew. The outlier from this group has a contradictory type (TYPE 2A3B – "housing expansion/accepting population decrease"). While the regulations of the PDM of Tomar have recently recognised socio-economic changes (9), it still advocates housing expansion.

The regulations of the second-generation PDMs are diverse and have a certain internal incoherence between the different parts/aspects of the regulation. The content analysis of the different parts of each of the regulations revealed that the integration of strategies towards population and housing varies. Except for Lisbon, which opts for housing stabilisation and accepts population decrease, we find that no constraints are imposed on housing development and that there is indifference to demographic change.

Lisbon has the most progressive and detailed regulation, qualitatively and quantitatively, due to the fact that it is a large and diverse city. Nevertheless, it is quite a miscellaneous type (3A4A/2B3B), sometimes advocating housing expansion, othertimes maintenance, and alternating between countering population decrease and accepting it. It is the only regulation where constraints are imposed, as mentioned earlier (TYPE 3A/3B – housing main-

Table 4. Matrix of results

NUTS-2	City	Goals	Constraints	Land use	Programming and implementation	Type	Urban Perimeter
NORTH	Espinho	TYPE 1A/1B	NC TYPE 1B	TYPE 2A	NA/TYPE 1B	TYPE 2A/1B	=
	Fiães e Lourosa	TYPE 1A/1B	NC TYPE 1B	TYPE 2A	NA TYPE 1B	TYPE 2A/1B	=
	Porto	TYPE 3A	NC TYPE 1B	TYPE 3A	TYPE 3A	TYPE 3A/1B	=
CENTRE	Gouveia	TYPE 1A/1B	NC TYPE 1B	TYPE 2A	NA/TYPE 1B	TYPE 2A/1B	–
	Mangualde	TYPE 2B	NC TYPE 1B	TYPE 3A	TYPE 3A/2B	TYPE 3A/1B2B	–
	Tomar	TYPE 3B	NC TYPE 1B	TYPE 2A	TYPE 2A	TYPE 2A/3B	=
LISBON	Almada	TYPE 1A/1B	NC TYPE 1B	TYPE 2A	TYPE 2A	TYPE 2A/1B	=
	Amadora	TYPE 1A/1B	NC TYPE 1B	TYPE 2A	TYPE 2A	TYPE 2A/1B	=
	Lisbon	TYPE 2B	TYPE 3A/3B	TYPE 3A/4A	TYPE 3A/2B/3B	TYPE 3A4A/2B3B	=
	Vila Franca de Xira	TYPE 4A/3B	NC TYPE 1B	TYPE 2A	TYPE 2B	TYPE 2A4A/1B2B3B	+
ALENTEJO	Vila Nova de Santo André	TYPE 1A/1B	NC TYPE 1B	TYPE 2A/2B	NA TYPE 1B	TYPE 2A/1B2B	+
AZORES	Angra do Heroísmo	TYPE 1B	NC TYPE 1B	TYPE 2A/3A	NA/TYPE 1B	TYPE 2A3A/1B	=
MADEIRA	Santana	TYPE 1A/1B	NC TYPE 1B	TYPE 2A/1B	NA TYPE 1B	TYPE 2A/1B	+

Explanation: NA Not applicable | NC No constraints, TYPE 1 – A without goals / B indifferent to population decrease, TYPE 2 – A housing expansion/ B countering population decrease, TYPE 3 – A housing maintenance/ B accepting population decrease, TYPE 4 – A housing shrinkage/ B utilising population decrease

tenance/accepting population decrease). Santana is an outlier, presenting a first-generation type (TYPE 1A2A/1B – without housing goals, housing expansion/indifferent to population decrease) (Table 4).

The urban perimeters of the statistical cities mostly stabilised (3 out of 6), taking into account that the perimeters of Porto and Lisbon are also administrative boundaries. In Mangualde, the urban perimeter decreased, while in Santana and Vila Franca de Xira it grew.

The PDM of Lisbon has a very comprehensive set of goals that can be summed up as: to attract,

rejuvenate and socially balance the population, to promote urban rehabilitation and regeneration, and to support a friendly, safe, inclusive, environmentally sustainable, resource-efficient, innovative and creative city, capable of competing for and generating wealth and jobs while maintaining a strong identity in a global context. The most determined constraint in this regard is the city's increase in environmental efficiency, namely minimising urban travel through the functional balance of the various urban sectors. In land use, "consolidation" is the key word.

Regarding programming and implementation, once again it has a complete set of objectives for the so-called operative units for planning and management (UOPG) that include for example land market control. Criteria are enumerated for an incentive system for important urban operations that are of municipal importance but less advantageous from private developers' standpoint (e.g. demolition of existing buildings in consolidated spaces). Finally, the Local Housing Programme (PLH) (10) sets out the multi-annual objectives of the municipal housing policy, with a cross-cutting attitude that integrates several municipal policies. It is advised that the PDM should be revised after five years, in accordance with the "real" spatial development and according to census results.

4. Discussion and conclusions

Demographic change and housing development in Portugal are only starting to converge. The analysis of these 13 regulations of the PDMs of 14 shrinking cities is just a sample but shows that population decrease and shrinkage in relation to housing development is slowly entering local planning practice, though there is not an overall coherent strategy (Fig. 1 and Fig. 2). Eight cities maintained their urban perimeters, three augmented them and only two decreased them.

These changes in urban perimeters have certainly been contributed towards not only by the solidly evidenced population decrease, but also by the PNPOT that now spills on to the reformed legal framework of the spatial management instruments. It promotes flexible planning, reinforcement of the PDM as a strategic tool, and development of cities through urban regeneration. Several innovations are relevant in this regard (MAOTE, 2015):

rational definition of urban areas based on supply and demand of urban land, and economic and financial viability (DL No. 80/2015, Article 69), privileging urban rehabilitation over new construction (11)

promotion of sub-regional planning to strengthen inter-municipal cooperation/ coordination, potentially generating synergies and economies of scale

plans' performance evaluation and plan revision (e.g. to correct supply distortions in the housing market)

This effect can also be attributed to the economic crisis and the deceleration of the housing market

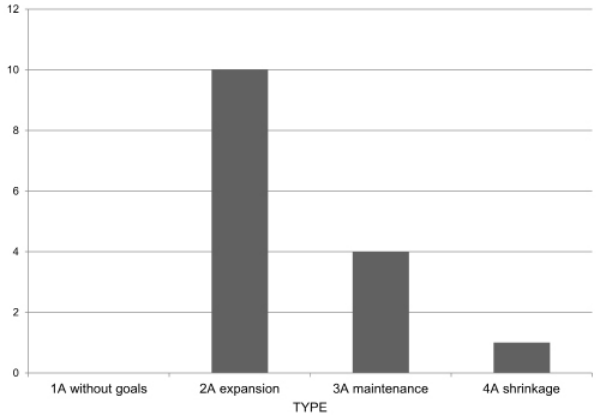

Fig. 1. Strategy towards population urban and expansion areas for housing

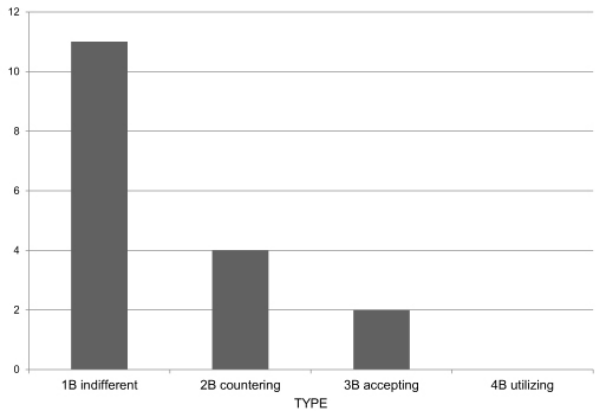

Fig. 2. Strategy towards population decrease

and consequently of the housing construction sector (Portas, 2007).

As in the CEE case (Simon and Mikešová, 2014), in Portugal it would be fundamental to monitor demographic changes and population development scenarios as a tool for policy-makers at various levels of administration and governance, as good knowledge would be a resource for evidence-based urban development and housing policies. It would also be important for Portugal to be part of a regional programme, similar to the Central European Programme, that addressed spatial effects of demographic change on regional and urban development, as transnational cooperation is seen as relevant for tackling these issues (Schönerklee-Grasser, 2012).

The comparative content analysis had limitations caused by disparities between the date of the several PDMs and between these and the occurrence of population decrease. Additionally, the municipalities can, and do, have diverse non-binding strategies and policies, which were not considered here. As in CEE countries, most of these policies are not related to demographic shrinkage *per se*, but are a part of other, broader policy documents. (Simon and Mikešová, 2014). Otherwise, the regulations of the PDM jointly with the evolution of the urban perimeters that define the (statistical) cities in question are just enough to mirror the intent(s) (or lack thereof) behind them and confirm our hypothesis.

Future research should include a survey inside local governments to understand how demographic change and housing development are perceived, tackled, integrated and monitored by local planning practitioners, the focus being on how these issues and forecasts actually influence decision-making in planning urban and residential development. This could possibly help to bridge the gap between research and practice in planning and catering for the specific needs of regions experiencing demographic change, or specifically urban and rural shrinkage. Given the similarities between South Europe and the CEE, comparative studies concerning these two macro-regions deserve future investigation.

Notes

(1) All municipalities but two extend beyond the perimeter of the city. In the cases of Lisbon and Porto, the area of the cities and the municipalities is one and the same. In some cases, the name of the shrinking city is not the same as the municipality, which is given in brackets. Fiães and Lourosa belong to the same municipality.

(2) Since November 2015, The Ministry of Environment has been responsible for spatial planning.

(3) From an initial universe of 28 PDMs, 11 were removed for not meeting all the conditions for comparative analysis. In the end, the sample comprised a total of 17 case studies: Arouca, Borba, Boticas, Bragança, Cabeceiras de Basto, Elvas, Évora, Maia, Mesão Frio, Moita, Mora, Peso da Régua, Vagos, Valpaços, Viana do Castelo, Vila Franca de Xira and Vila Nova de Gaia.

(4) Barreiro, Elvas, Espinho, Lamego, Lisbon, Matosinhos, Porto, Tomar, and Vila Franca de Xira.

(5) The diagnosis was organised into 13 sections. Each section represented a characteristic/consequence of shrinkage (e.g. "Population Decline"). The procedure consisted in analysing the whole content of the document against the characteristics/consequences.

(6) Part of the literature may translate Plano Director Municipal as Municipal Master Plan, but the authors consider that Municipal Director Plan is more literal but appropriate, avoiding confusion with the British municipal master plan, a document with a quite different set of characteristics.

(7) Panagopolous et al. (2015) note that in contrast to the situation in other countries, where a city council manages a city, in Portugal this occurs only where the municipal boundaries are coincident with the city – nonetheless, with the sole exception of Lisbon and Porto, this is not the case for the Portuguese municipalities that incorporate both urban and rural areas, several cities, or even no cities in rural municipalities.

(8) *Regime Jurídico dos Instrumentos de Gestão Territorial.*

(9) Aviso No. 2550/2015 de 9 de março – Suspensão parcial do PDM de Tomar e medidas preventivas

(10) The PLH is not an integral part of the PDM but still Lisbon is the only municipality that gives emphasis to it in the text of its regulation.
(11) Over-dimensioned urban perimeters have been extensively criticised in Portugal (Portas, 2004).

Acknowledgements

This research was supported by the Portuguese Foundation for Science and Technology and the Human Potential Operational Programme/European Social Fund under Grant SFRH/BPD/86503/2012.

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Ministry of Science and Higher Education
Republic of Poland

The proofreading of articles, positively reviewed and approved for publishing in the 'Bulletin of Geography. Socio-economic Series', was financed from the funds of the Ministry of Science and Higher Education earmarked for activities popularizing science, in line with Agreement No 509/P-DUN/2016 and 695/P-DUN/2018.